



NHHPC: Connecting Through Collaboration Updates and Results

NASA Ames Research Center

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NHHPC Updates

- Discussion Topics
 - Recap of first year of NHHPC
 - NASA open innovation results
 - Charge to breakout sessions



NHHPC: Recap of First Year



NHHPC Progress



- Established October 18, 2010 as global convener to support the advancement of human health and performance innovations
- Membership has grown to 105 government agency, corporate, academic, and non-profit organizations



Member Organizations



Institute of
Aerospace Medicine



PEPSICO



wyle



ONR
Office of Naval Research



USAID
FROM THE AMERICAN PEOPLE

cause
SHIFT



Massachusetts
Institute of
Technology



DYNAMAC



charles river
accelerating drug development. exactly.



mozilla



open.NASA



Opportunity International



Dr. Patricia Hilliard Robertson, MD
Center For Aviation Medicine
at Indiana Regional Medical Center

BRAIN MAPPING
FOUNDATION



Pitney Bowes

Southeast Texas Biomedical
Research Institute

Tufts University
Center for Engineering
Education and Outreach



CLEMSON
UNIVERSITY



Orion Quest
Authentic Research For
Today's Youth



Biomatrica
THE BIOSTABILITY COMPANY

TERAPI



GE imagination at work



Wright Brothers
Institute



utmb Health
Aerospace Medicine



ASU BIODESIGN
INSTITUTE
ARIZONA STATE UNIVERSITY



National Center for
Research Resources



Lincoln Center|institute

PRIZE4LIFE Life



Kimberly-Clark

GSAPP Life



SQUAREONE
EDUCATION NETWORK
the future starts with us



NHHPC Theme Update



Performance



Innovation



Health



Habitability



Research



Education



Social
Entrepreneurship

- NHHPC efforts address human health, human factors and performance, habitability, and environmental health risks and issues
- Projects include collaborative efforts or advances in the areas of research and technology development, education and outreach, collaborative innovation methodologies, and now also in social entrepreneurship
- Best practices in each of these areas will be shared among member organizations



NHHPC Workshop #1

Outcomes of Collaborative Innovation: Strategies and Best Practices

--January 19, 2011, NASA Johnson Space Center

- Ideas for multiple collaborative projects among multiple members
- Development and launch of a member secure wiki with discussion boards, project rooms, and a searchable member directory based on member recommendations
- Microbiology Workshop hosted by NASA MSFC to evaluate existing and emerging microbial monitoring technologies
- Establishment of Education and Outreach Working Group
- Development of Social Entrepreneurship theme



Collaborative Projects



Government

Non-Profit

Collaborative Innovation

Global Knowledge

Health and Performance

Corporate

Academia

Partnerships

Social Entrepreneurship

Human Spaceflight

Visit us at: www.nhhpc.nasa.gov

- Space Act Agreement (SAA) between NASA and NHHP partners – one signed, two in work
- NASA technical needs and solutions workshops with the DoD Defense Venture Catalyst Initiative (DeVenCI)
- Tufts University and NASA student teacher education pilot (STOMP) to inspire students in STEM disciplines
- NASA and the San Diego Zoo joint competitive challenge in biomimicry
- Education and Outreach Working Group developing an open innovation challenge for students
- NASA and the FAA Center of Excellence Commercial Space Flight have five collaborative projects



Member to Member Connects

- Developed to give members an opportunity to present their organization's collaboration ideas and needs, innovation successes, and project plans via WebEx
- Keeps the dialogue going between workshops!
 - June 1, 2011: US Office of Naval Research
 - More than 20 collaborative project areas were identified
 - Sept 7, 2011: Center for Clinical and Translational Research at Harvard Medical School
 - Next : NASA on Opportunity for the Use of the International Space Station by Domestic Entities Other Than U.S. Federal Government Agencies—a new model for rapid identification and approval of research and technology proposals



Today: NHHPC Workshop #2

Connecting Through Collaboration

- Developed to build upon successes and outcomes of first workshop and develop new collaborative projects
- Special topics organized by the Education and Outreach Working Group
- Networking and breakout sessions on many topics to address expressed interests of members and further the outcomes of previous breakout sessions
 - medical technology development
 - collaborative web tools
 - education and outreach
 - social entrepreneurship
 - performance and human factors
 - Innovative methodologies



NASA Open Innovation Updates

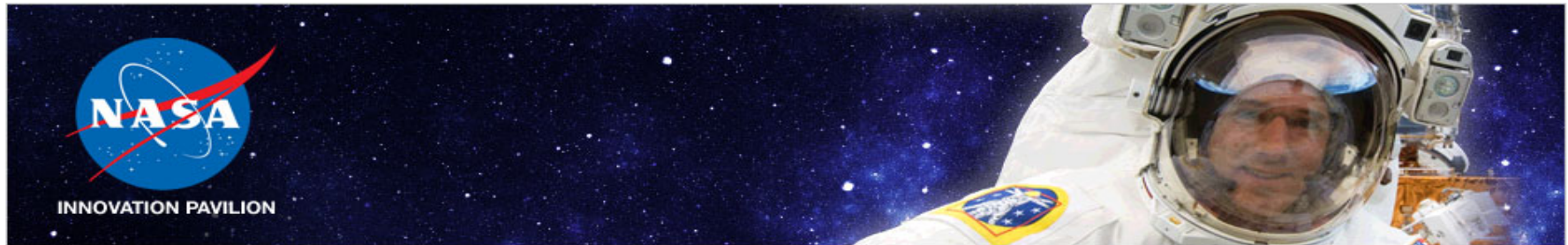
Space Life Sciences
Exploring Space | Enhancing Life



NASA Open Innovation Results

- Open Innovation Platforms
 - InnoCentive
 - Yet2.com
 - NASA@Work
 - TopCoder
 - NASA Tournament Lab
- Needs/challenges are posted on a website to solicit solutions or partners from an established virtual community

NASA Innovation Pavilion



[NASA Pavilion Home](#)

[NASA Challenges](#)

Global Appeal-

2900 solvers

80 Countries





InnoCentive Pilot Results

Challenge Title	Ctr	Posted	Deadline	Proj Rms	Sub	Award Date	Award Amount
Improved Barrier Layers ... Keeping Food Fresh in Space	JSC - SLSD	12/18/2009	2/28/2010	174	22	5/7/2010	\$11,000
Mechanism for a Compact Aerobic Resistive Exercise Device	JSC - SLSD	12/18/2009	2/28/2010	564	95	5/14/2010	\$20,000
Data-Driven Forecasting of Solar Events	JSC - SLSD	12/22/2009	3/22/2010	579	11	5/13/2010	\$30,000
Coordination of Sensor Swarms for Extraterrestrial Research	LRC	2/27/2010	4/26/2010	423	37	6/4/2010	\$18,000 (3)
Medical Consumables Tracking	GRC	5/17/2010	7/27/2010	365	56	10/28/2010	\$15,000 (3)
Augmenting the Exercise Experience	JSC - SLSD	5/27/2010	7/27/2010	229	18	9/20/2010	\$10,000
Simple Microgravity Laundry System	JSC - EA	5/27/2010	7/27/2010	598	108	9/21/2010	\$7,500



yet2.com Pilot Results

<i>Technical Need</i>	<i>No. of total replies/leads</i>	<i>No. of hits (initial interest)</i>	<i>Active leads</i>
Bone Density Measurement	51	793	5
Monitoring of Water and Biocides	61	2003	8
Radioprotectants	28	475	6
Exoterrestrial Life Differentiation	31	1596	1
Food Packaging/Protection	29	173	5
Portable Imaging	34	581	5



NASA@Work

- Early Findings
 - Connected 10 NASA centers horizontally (peer to peer)
 - Connected areas of expertise previously untapped
 - Enthusiasm for the pilot and willingness to use again
 - Positive comments about NASA trying a new business model
 - Solid solutions for some technical problems



TopCoder



[Design](#) [Develop](#) [Press Room](#) [Help](#) [Contact Us](#) [REGISTER](#)

The world's largest competitive software development community
The TopCoder Community is **278,506** strong.



What is TopCoder?

TopCoder is Innovation.

TopCoder is revolutionizing the software design and development process by tapping in to our unlimited global community to work for you.

What can we help you do today?

Get Started

Top News: DARPA-funded project to spark computer science education



Platforms:
Virtual Software Factory / Directed Innovation

Assist internal engineering teams to build various APIs to expose capabilities within PayPal's core products. Provide open innovation contests to use and display the capabilities of those APIs.

TopCoder is the world's largest competitive software development community with 278,506 developers representing more than 200 countries.
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What is NASA Tournament Lab?

Operational Virtual Facility developed between NASA, Harvard, and TopCoder



[TOPCODER]

Two Objectives –

- 1 Create novel, high quality working software for algorithmic / computational Challenges
- 2 Contribute towards the development of empirically validated science of innovation tournaments

Utilize the principles of distributed innovation to allow participants worldwide to contribute to solving mission challenges by developing innovative computational algorithms.

[HOME](#)[ABOUT](#)[HOW TO COMPETE](#)[NASA](#)[FORUMS](#)[RESEARCH PORTAL](#)

WELCOME TO THE NASA TOURNAMENT LAB

NASA, Harvard Business School, and TopCoder have established the NASA Tournament Lab (NTL), which will enable the TopCoder community to compete amongst each other to create the most innovative, most efficient, and most optimized solutions for specific, real-world challenges being faced by NASA researchers.

[read more](#)

HOW TO COMPETE

Where to compete, how to register, and much more!



RESEARCH PORTAL

NASA researchers, sign in here!



Leaderboard

Handle	Points
byronknoll	1
cannab	1
jagdish.vasani	1
parashurama	1
rado42	1
redquark	1
TheKingOfWrong	1
yowa	1



LATEST NEWS

JAN
28

The idea behind the first NTL marathon match challenge

posted by [NASA_Terry](#) on January 28, 2011 at 4:19 pm

The first NASA Tournament Lab challenge directly addresses NASA's on-going work to detect and classify features of scientific and humanitarian interest. NASA is interested in automatically processing remote sensing (aerial and satellite) data for a variety of reasons: there is increasingly too much data to deal with manually; there is a need to extract information from data in real-time; and there is an ever growing backlog of archived data waiting to be analyzed.

NASA has collected more scientific information about our planet and solar system than any entity in the history of humanity. The Mars Reconnaissance Orbiter alone



Active NTL Contests

NASA NTL - Marathon Match 1

\$10000[More Details](#) | [Register](#) | [Discuss](#)

News and Announcements

▶ The idea behind the first NTL marathon match challenge
by [NASA_Terry](#) on 01/28/2011 (4:19 pm)

▶ Welcome to the NTL
by [mike](#) on 01/26/2011 (7:18 pm)

[View All](#)



Questions?



Charge to Breakout Sessions



Charge to Breakout Groups

- Please focus on:
 - Collaborative projects
 - Exchange of best practices
 - Collaborative challenges (prizes)
- Discuss use of the members only wiki discussion board and project rooms and develop suggestions for improvement to accomplish the above
- Consider formation of a working group like Education and Outreach to continue development between meetings
- Discussion will be captured and posted on wiki and incorporated in to a final report